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IDEA 0107

Copy 7 of 7

9 February 1961

MEMORANDUM FOR: Chief, Operations Branch, DPD

SUBJECT: Use of Burning Fuse to [REDACTED]

[REDACTED]

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1. The following is a report of a telephone conversation with [REDACTED] SD, [REDACTED] at 1030 hours, 9 February 1961.

2. [REDACTED] stated that to confirm his own opinions, on the subject of the burning fuse problem he had called the Director of Research of the manufacturing company. He further stated that this individual was the most knowledgeable man in the business. The following information was obtained from the conversation between [REDACTED] and the manufacturer.

a. The fuse burns at the rate of 3 feet per 2 minutes at sea level. (120 seconds per yard)

b. As pressure is decreased (altitude increased) the burning rate decreases until at 20,000 feet it is approximately 128 seconds per yard.

c. At 30,000 feet the fuse will not burn at all due to the lack of pressure, in fact if the fuse is lighted at some low altitude and while burning it is taken to 30,000 feet it will stop burning.

d. The decrease of burning rate with increase of altitude is not a straight line but a curve which is not very predictable.

e. At sea level the burning rate accuracy from roll to roll is plus or minus 10% and the accuracy within a given roll is plus or minus 5%.

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f. As temperature is reduced a hardening of the core (burning portion) of the fuse takes place. This causes unpredictable and erratic burning, that is it will burn very rapidly for a time, then very slowly, etc. While this is unpredictable it does generally average out. But at times it could very well go all, or mostly, one way or the other. (This action is independent of the pressure problem).

g. The above deficiencies could be nullified by placing the length to be burned in a heated pressurized container with a valve to keep the pressure constant during descent.  thinks the design and building of such a container would consume considerable time.

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h. For the long pull it may be possible to have the manufacturer develop a special fuse to accomplish our task. No time estimate for this is available but time in the nature of months could be assumed.

SIGNED

DPD/OPS/RS

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